**Element Representation Poster**

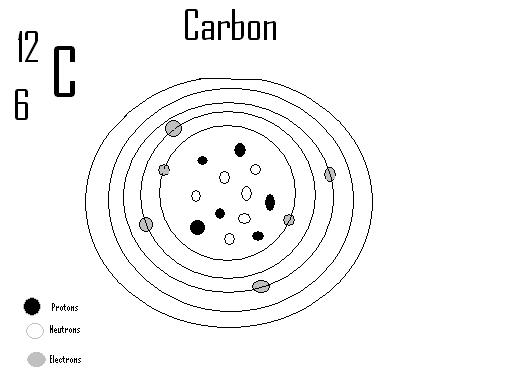
**Instructions**

You will be given 4 elements. Draw a Bohr Model, Lewis Dot Diagram, Electron Orbital Diagram, and Electron Configuration for each. You can divide your poster into fourths, or halves and do it front/back. You will be responsible for your own poster.

**Bohr Model**

**-**Draw Protons & Neutrons in different colors in the nucleus, and electrons on the orbitals.

-**Protons** – equal to atomic number – The smaller of the two numbers on the periodic table

 -**Electrons** – Equal to # of protons. Place no more than can fit **(2-8-8-18-18-32-32)**

-**Neutrons** – Equal to Atomic Mass rounded to nearest whole number minus # of Protons – (atomic mass is the bigger of the two numbers on the periodic table)

-Make a chart to show what each colored dot represents

-Label each atom and include its symbol.

-The symbol includes the mass number (rounded atomic mass) and atomic number

**Electron Configuration**

Determine the number of electrons. (Same as atomic #.) Figure out where to stop on the diagram. S has 2 Electrons; P has 6 Electrons; D has10 Electrons;

1s

2s 2p

3s 3p 3d

4s 4p 4d 4f

5s 5p 5d 5f

6s 6p 6d 6f

7s 7p 7d 7f

F has 14 electrons. Electrons are written as superscripts. For example:

**Titanium has 22 Electrons – 1s22s22p63s23p64s23d2** If you add the

superscripts it equals 22, one for each electron. Notice the last orbital is

not full.

**Aufbau Diagram**

 **-**Determine the number of electrons. Draw the diagram and draw an up or down arrow to represent electrons.

-Fill a horizontal row before going onto the next one

-Draw an up arrow in each box in a row, when full draw down arrows.

Example: Carbon – 6 Electrons

**2p**

**2s**

**1s**

**Electron Orbital Diagram**

-After you draw the full Orbital Diagram, compress it and draw again.

-Example

Cobalt – 27 Electrons

1s 2s 2p 3s 3p 4s 3d

**Lewis Dot Diagram**

**-**Take the number of electrons in the S & P orbitals after the noble gas (called valence electrons), and put that many dots around the symbol.

-For example: Titanium - **[Ar]4s23d2 = 2 Valence electrons,** because there are two in the S orbital, none in the P, and D & F don’t count. Ti

-If you’re element is in the Chromium or Cobalt family you have one valence electron. It’s the only exception you need to worry about.

-Put one electron on each side of the symbol in this order left, right, top, bottom repeat. (this puts electrons furthest from each other since negative charges repel each other.)

1- H, Rn, W, Th 11- Sr, F, Au, Fm 21- Nb, N, V, Gd

2- Li, Xe, C, Pa 12- Be, Po, Fe, Md 22- Ta, Pb, Nb, Tb

3- Na, Kr, Ti, U 13- Ra, Te, Cu, No 23- Db, Sn, Ta, Dy

4- K, Ar, Mn, Np 14- Y, Se, Os, Lr 24- Cr, Ge, Db, Ho

5- Rb, Ne, Tc, Pu 15- La, S, Ag, Ce 25- Mo, Si, Sg, Er

6- Ca, He, Re, Am 16- Ac, O, Zn, Pr

7- Fr, At, Sg, Cm 17- Rf, Bi, Cd, Nd

8- Be, I, In, Bk 18- Hf, Sb, Hg, Pr

9- Mg, Br, Ga, Cf 19- Zr, As, Ni, Sm

10- Ca, Cl, Si, Es 20- V, P, Co, Eu